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An Account of a particular Change of Structure in the Human Ovarium. *By* Matthew Baillie, *M. D.* Vide *Philoſophical Tranſactions of the Royal Society of London, Vol. LXXIX. for the year* 1789. 4to, London.

THE ovaria in women, Dr Baillie obſerves, are ſubject to a great variety of changes from their natural ſtructure. Many of theſe are exactly ſimilar to what take place in other parts of the body; but there is one change, which he conſiders as peculiar to them, and the nature of which, he thinks, has not hitherto been well aſcertained. This change of ſtructure is a converſion of the natural ſubſtance of an ovarium into a fatty maſs, intermixed with hair and teeth.

We have already, in a former part of this volume, preſented our readers with a ſingular hiſtory

hiſtory of this kind, and with the obſervations and ſentiments of an ingenious anatomiſt reſpecting it; and we have here before us another caſe of the ſame kind, which, though varying in ſeveral particulars, is, in its circumſtances, not very diſſimilar. This caſe, which occurred to another diſtinguiſhed anatomical teacher, is here communicated to the public, with thoſe reflections which it ſuggeſted to him.

Though many caſes of this kind are to be met with in books of diſſections, yet few have ventured to offer any conjectures on the mode of their formation. But, in general, they have, Dr Baillie obſerves, been conſidered as imperfect attempts at the growth of a fœtus in the ovarium, in conſequence of the connexion between a male and a female. This conjecture reſts, he admits, on circumſtances of ſtrong probability; but he thinks it is liable to many powerful objections. And, among other particulars, from the following caſe, he is led to believe, that the ovaria in women have ſome power within themſelves, of taking on a proceſs which is imitative of generation, without any previous connexion with a male.

In

In a female child about twelve or thirteen years old, which was lately brought to Windmill Street for diſſection, Dr Baillie found the right ovarium converted into a ſubſtance, doughy to the touch, and about the ſize of a large hen's egg. Upon cutting into this ſubſtance, he found an apparently fatty maſs, intermixed with hair and an excreſcence of bones. This ſtartled him very much, as he had always been led to believe, that ſuch appearances were a ſort of imperfect conception; and, the circumſtances altogether being very ſingular, he was led to pay particular attention to them.

The fatty maſs was of a yellowiſh white colour, in ſome places more yellow than in others; it was very unctuous to the feeling, and conſiſted of ſhortened and ſeparated particles, not having the ſame coaleſcence which the fat has generally in the body. It became very ſoft when expoſed to the heat of a fire, and ſunk into a portion of paper on which it was ſpread, ſo as to make it more tranſparent. When the paper to which it was thus applied was expoſed to the flame of a candle, it burnt with conſiderable crackling.

The hair with which the fatty ſubſtance was mixed, grew out of the inner ſurface of the capſule containing it, in ſome places in ſolitary hairs, but chiefly in ſmall faſciculi, at ſcattered irregular diſtances. Beſides theſe, there were looſe hairs involved in the fatty maſs. The hairs were ſome of them of conſiderable length, even to three inches; were fine, and of a light brown colour. They reſembled much more the hair of the head than what are commonly found on the pubis, and correſponded very much in colour to the hair of the girl's head.

There aroſe, alſo, from the inner ſurface of the capſule, ſome veſtiges of human teeth. One appeared to be a canine tooth; another to be a ſmall grinder; two others to be inciſores; and there was alſo a very imperfect attempt at the formation of another tooth. Theſe were not fully formed, the fangs being wanting; but, in two of them, the bodies were as complete as they are ever found in common circumſtances. They were each of them incloſed in a proper capſule, which aroſe from the inner ſurface of the ovarium, and conſiſted of a thick white opaque membrane.

Attached to the capſules of three of the teeth, there was a white ſpongy ſubſtance. The membrane of the ovarium itſelf was of ſome conſiderable thickneſs, but unequal in the different parts. It was very ſmooth in its inner ſurface, and more irregular externally. The uterus was ſmaller than it is commonly at birth; was perfectly healthy in its ſtructure; and, upon opening into its cavity, it exhibited the ordinary appearances of a child's uterus at that period. The left ovarium was very ſmall, correſponding to the ſtate of the uterus. From this it appears, that the uterus had not yet received an increaſe in bulk, which is uſual at the age of puberty. The hymen was entire, ſuch as is commonly found in a child of the ſame age; and there was juſt beginning a lanugo upon the labia, not more than is often found on the upper lip of a boy of fifteen years old.

From this ſingular appearance, the circumſtances of which have been now related, Dr Baillie next proceeds to draw ſome concluſions. It naturally, he obſerves, ſtrikes the mind as being very different from any irregular ſubſtance formed by diſeaſe. It took place in a part of the body which is ſubſervient to generation, and where a complete fœtus is ſometimes formed. This might ſeem to lead to the concluſion, that the production of hair and teeth in the ovarium was a ſort of imperfect impregnation. But he thinks there are reaſons, at leaſt equally ſtrong, for believing that ſuch productions may ariſe from an action in the ovarium itſelf, without any ſtimulus from the application of the male ſemen.

In the caſe which has juſt been related, the uterus was as ſmall as at birth; and the left ovarium correſponded to the ſtate of the uterus. It had not been ſtimulated, nor did it appear capable of being ſtimulated, by the application of the male ſemen. This he conſiders as a ſtrong circumſtance; for a preparation is ſtill preſerved in the collection of Windmill Street, made by the late Dr Hunter, where an ovum was formed in one of the Fallopian tubes, and the uterus was enlarged to more than twice its unimpregnated ſize. From this he concludes, that when impregnation takes place out of the cavity of the uterus, that viſcus ſtill takes a ſhare in the action, and undergoes ſome of the changes of impregnation.

nation. And, to the ſame concluſion reſpecting the action of the uterus in the formation of an extra-uterine fœtus, he is led alſo by other preparations, particularly from one, preſerved alſo in Dr Hunter's collection, where a fœtus was formed in the ovarium, in which the uterus was increaſed to more than twice its ordinary ſize, was very thick and ſpongy, and had its blood-veſſels enlarged in the ſame manner as an impregnated uterus. But, in the preſent caſe, the uterus had undergone no change.

Dr Baillie farther remarks, that we are not to conſider the formation of teeth in the ovarium to be a quicker proceſs than it uſually is in the head of a fœtus. In this inſtance, however, the teeth having advanced fully as far as they in general are at ſome months after birth, their growth muſt, he thinks, have begun at leaſt more than twelve months before the death of the child; which, in his opinion, brings their commencement to an earlier period than impregnation can be believed to have taken place.

From all theſe circumſtances, Dr Baillie is inclined to ſuppoſe, that the formation of hair and teeth was not here the conſequence of any connexion with a male, but aroſe from ſome action of the ovarium itſelf, in which the uterus did not participate. And, as ſome additional confirmation of the probability of this opinion, he obſerves, that hair is occaſionally found in parts of the human body which are altogether unconnected with the function of generation. Hairs have often been found in encyſted tumours; and Dr Baillie particularly mentions ſeveral preparations of this ſort in the collection of Mr John Hunter. All theſe circumſtances, he thinks, clearly prove, that hair may be formed without any ſpecies of generation.

But hair is as much a peculiar ſubſtance as teeth. If the one, therefore, can be preternaturally formed in the ovarium, no good reaſon can, he thinks, be aſſigned, why the other may not alſo be formed there. The action producing the one, is not, he obſerves, better underſtood than that producing the other. Teeth, therefore, he thinks, may probably be formed by a peculiar action taking place in the ovarium, as well as hair.

To add ſtill farther weight to this opinion, he obſerves, that many of the adult teeth are formed in a child after birth; and that, therefore, their formation depends on an action taking place in the jaw at a particular period, and not on original growth. Teeth are ſometimes, alſo, occaſionally formed at an advanced period of life. Both theſe proceſſes, he obſerves, take place after the animal has been formed, in conſequence of a certain action being excited in a particular part of the body. There is, therefore, he thinks, leſs difficulty in believing, that the ſame ſort of proceſs may go on in another part of the body not commonly employed in it. And, in his opinion, it is but reaſonable to ſuppoſe, that the ovaria ſhould have a greater aptitude of taking on a proceſs ſomewhat ſimilar to generation, than other indifferent parts of the body, as they conſtitute a part of the organs which are ſo materially concerned in the real proceſs itſelf. From all theſe circumſtances, taken collectively, he thinks it is rendered very probable, that the formation of hair and teeth in the ovarium does not neceſſarily depend, as has been the common opinion, on a connection between a male and female, but ariſes from ſome action within the ovarium itſelf, which is imitative of generation.

How far the intelligent reader will be diſpoſed to adopt this theory, we will not pretend to conjecture. We muſt, however, obſerve, that we readily agree with the ingenious author of this paper, in thinking, that there is no reaſon for ſuppoſing the generation of hair and teeth, in the fatty ſubſtance found in the ovarium, in the caſe related above, was the effect of any connection with a male; but perhaps a conjecture, more ſimple than any ſuppoſed action of the ovarium itſelf, imitative of generation, may be ſuggeſted with reſpect to their production. Although teeth, in general, appear only after certain periods of life, and in an eſtabliſhed ſucceſſion; yet it is well known, that the rudiments of all of them are diſcoverable in the jaw of a fœtus at a very early period of its exiſtence. The teeth, as the ingenious Mr John Hunter has juſtly obſerved, though deriving their growth and nouriſhment from the ſyſtem, may yet be viewed as aliens to the body. This obſervation is no leſs applicable to the hairs. Each hair, found either upon

upon the head, or any other part of the body, derives its origin from a particular bulb, as much as a tooth does from its original rudiment. May we not, therefore, ſuppoſe teeth and hair to grow in the ovaria, from ſome monſtrous conformation of parts forming there the rudiments or bulbs of each? and may not this monſtrous conformation be peculiar to the ovaria, from that function for which they are naturally intended? For, although generation is ſtill to be viewed as one of the greateſt myſteries in the animal œconomy, yet there can be no doubt, that the ovaria have a concern in that function; and that thus they are ſubſervient even to the production of a complete fœtus, furniſhed both with hair and with teeth. But it is alone from future obſervations of facts, that even probable evidence, either of this or any other conjecture, can be obtained.